Research Synthesis

Educational and Labor Market Performance of GED Recipients

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PREFACE

Often it is hard to tell what conclusions can be drawn from education research studies, because the studies on a given subject have not been examined systematically as a body of research. Analyses conducted at different times with different populations and different research methods often yield apparently inconsistent conclusions about the same subject. Given ambiguous research findings, advocates of one position or another may promote those that support their views, while ignoring or minimizing contrary findings. In such circumstances, researchers, policy makers, and practitioners, such as teachers and administrators, may lack the comprehensive, balanced, objective information they need. While many good syntheses of education research have been produced over the years, many topics have not yet been covered.

In response to this need, the National Library of Education (NLE) has undertaken a series of research syntheses on issues of public concern in education. Based on published literature identified through traditional bibliographic searches, ERIC, and other Internet sources, and on unpublished Ph.D. dissertations and research reports available to NLE, the syntheses are designed to be empirical, even-handed, and as comprehensive as possible.

This study of the performance of General Educational Development (GED) recipients is the first synthesis in the series. The result of a great deal of careful research, it should be especially useful to those concerned with the education of adults and out-of-school youth.

We look forward to the new research syntheses to be provided in the future.

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EXECUTIVE SUMMARY

Background

In 1995 almost three-quarters of a million high school dropouts, age 16 and above, took the General Educational Development (GED) Tests, seeking the most widely recognized form of alternative secondary certification in the United States. The half million who passed it were awarded high school equivalency diplomas, about one-sixth of all the high school diplomas issued in that year.

GED examinees say that they take the tests primarily to get access to more education and to improve their job prospects. How successful are those who attain the GED credential? How does their performance in postsecondary education and the job market compare with that of regular high school graduates? With that of other high school dropouts? And what relation, if any, does GED certification have to the outcomes in these arenas? This study examines 50 years of research that addresses these and related questions.

The GED Tests were developed for the U.S. Army during World War II. At that time, the Roosevelt administration favored federal support for the college education of returning veterans, but many service members lacked the high school diplomas necessary to enter college. The granting of diplomas for wartime service had been tried after World War I, but colleges and universities came to oppose this practice. As an alternative, the American Council for Education (ACE) proposed testing veterans to determine competence for college. In 1942, test experts working for the Army selected five tests from the Iowa Test of Educational Development to form the first General Educational Development Tests. The tests reflected the emphasis of progressive educators on learning related to everyday life rather than on formal academics.

In the 1940s, GED test takers were mainly veterans and service members, and the test results were used mainly for college admissions. After the War, however, the tests were also administered to civilians, and states began to award high school credentials for passing the tests. By 1959, civilian test takers outnumbered veterans and service members.

From the beginning, the GED test battery has contained five different exams—writing, interpretation of literature, math, social studies, and science—though the content of the tests has changed. As a rule, the tests present written passages and multiple choice questions about the passages. They also provide additional information needed to answer the questions, such as mathematical formulas.

The American Council for Education's GED Testing Service produces and administers the tests, and its Commission on Educational Credit and Credentials sets the minimum passing standards. Above the minimums, states are free

to set their own conditions for passing the GED and awarding credentials. The original wartime passing standards were in place until 1982, when the ACE commission raised them. The commission raised the standards again in 1997.

In the years during and immediately after the war, the overwhelming majority of veterans who took the GED passed it. For the mostly civilian examinees who took the test between 1974 and 1995, the median yearly pass rate was 71.5 percent. However, the *eventual* pass rate for a cohort of initial test takers is probably somewhat higher, because candidates can usually retake tests that they fail or do not complete.

On average, GED recipients perform about as well as graduating high school seniors on each of the five tests. Their scores are a little higher on the social studies, science, and literature tests and a little lower on the writing skills and math tests. However, the relation between the performance of GED recipients and that of high school seniors on the entire five-test battery has been a subject of debate.

From the early years of the GED, critics charged that passing the tests was too easy and did not reflect the skills of high school graduates. Beginning in the 1980s, new challenges to the test arose in several areas. First, a series of studies by military manpower researchers showed that enlistees with GEDs tended to have high attrition rates. Second, the Wisconsin Department of Public Instruction found that GED recipients enrolled in Wisconsin colleges were much more likely than high school graduates to leave and that their grades and other measures of performance were lower than those of high school graduates. Third, a 1993 study by economists Stephen Cameron and James Heckman concluded that GED certificate holders are less likely to be employed, earn less, and experience more job turnover than high school graduates, once other factors are controlled. Against this background, the current synthesis will examine research on the performance of GED recipients in postsecondary education, the labor market, and the armed services.

Functions of the GED

Before assessing the performance of GED recipients, however, the synthesis examines the social functions that the GED process performs or is said to perform.

The GED as a Stimulus to Human Capital Investment

Human capital investment is the time, money, and other resources expended in acquiring work-relevant skills. Time spent in formal education and/or training is a widely used measure of human capital investment. Based on this measure, to what extent does the GED stimulate human capital investment among non-high school graduates?

The GED as an Incentive to Invest

In 1980, GED examinees spent a median of 20 hours (and $10) preparing for the tests. By 1989, they were spending a median of 30 hours in preparation. This change was driven by a doubling in the proportion of candidates who spent over 100 hours preparing for the tests—from 11.8 percent to 24.2 percent. Reasons for this increase are unclear.

Although 30 hours of test preparation is a very limited investment in human capital, the proportion of examinees who spent more than 100 hours preparing for the GED deserves attention. Research suggests that an adult learner needs approximately 100 hours of instruction to achieve a 1-year gain in reading ability.

Still, such investments are much smaller than the approximately 410 hours spent in core curriculum classes in a typical school year. In 1995, GED test takers had completed a mean 9.9 years of school. With 2.1 years of additional schooling, high school graduates typically had 861 more hours of core curriculum classes.

The GED as a Disincentive to Invest?

Because passing the GED takes less time and effort than a high school diploma and may appear to have the same status, some researchers believe that it encourages marginal students to drop out of school or facilitates their departure. Almost half of the states (24) allow young people to take the test before the age at which they would ordinarily graduate from high school, and several have allowed school systems to start alternative in-school programs leading to a GED. (The ACE commission waived a prohibition against administering the GED to students in high school on a trial basis and subject to conditions.)

No systematic research directly addresses the question of whether the GED encourages dropping out, and an examination of related literature found no substantial evidence to support the hypothesis that it does.

Measuring and Assessing Cognitive Skills

The GED was designed to measure the ability to understand, evaluate, and manipulate concepts and information and to use knowledge and reason to reach general conclusions in five subject areas. Underlying performance in each of these areas is a set of basic cognitive skills that is the primary determinant of the scores on all five. The underlying cognitive skills are reflected in intercorrelations among the tests ranging from .64 to .82 and in strong correlations between total GED Test scores and total scores on other tests, such as the American College Test (.80), the National Adult Literacy Survey (.78), and the military entrance examination (.75 and .79 in two analyses).

Analyses of data from the National Adult Literacy Survey (NALS) and the Armed Services Vocational Aptitude Battery (ASVAB) show that GED certification designates non-high school graduates whose cognitive skills exceed those of other dropouts. On average, GED recipients have adult literacy skills equal to

those of high school graduates. In terms of ASVAB scores, GEDs are not equal to graduates, but they are closer to graduates than to dropouts.

The GED as a Sorting Procedure

The GED process, beginning with the decision to take the test and ending with the certification of successful examinees, provides an opportunity for high school dropouts to demonstrate their cognitive skills and related knowledge. GED examinees tend to have more of these skills than other dropouts, and simply by taking the test, they set themselves apart. Self-selection is the major part of the sorting process that the GED performs. Although many of today's new dropouts take the test, only 1.5 percent of 44 million adults without high school diplomas have done so. Once an individual takes the test, the probabilities of passing are fairly high.

The GED process tends to select dropouts who have more schooling and higher socioeconomic status than other dropouts, as well as stronger cognitive skills. They have fewer of these assets than high school graduates, however.

The GED as Certification

The GED process certifies dropouts with relatively good cognitive skills as having passed the tests, providing a high school equivalency award. This certification can serve to signal educational institutions, employers, and others that the GED recipient has demonstrated the ability to read, write, think, and compute at the high school level, according to state standards for passing the test.

Postsecondary institutions usually accept the GED, but many require additional evidence of ability to perform in college, such as SAT or ACT scores. In this respect, the admission requirements for GEDs are similar to those for high school graduates. In addition to opening doors to postsecondary education, GED certification can also help GED enrollees obtain federal financial aid, such as Pell Grants and Guaranteed Student Loans.

Most employers surveyed in the studies reviewed accepted the GED credential and regarded it as equivalent to a high school diploma. Further, a majority of those responding to two surveys thought that GED recipients performed their work as well as high school graduates. However, many of the employer studies raise questions about the relevance of all secondary education credentials to hiring decisions. If the saliency of secondary education credentials for employer decisions is low, then the distinction between those with credentials and those without may not matter much, and the signal that an employer receives from either kind of credential may be weak.

The GED as a Self-Confidence Builder

Low self-esteem is associated with an array of negative outcomes. Breaking out of the cycle of low self-esteem and poor performance can be extremely difficult. Survey research indicates that most high school dropouts who pass the GED feel better about themselves, and their increased self-esteem may help them acquire more education, get better jobs, and generally improve their life circumstances. The durability of this new self-confidence is an important question, but one for which there is no answer at present.

Postsecondary Outcomes

What proportion of GED recipients enroll in postsecondary education and training programs, and how well do they do in them?

Postsecondary Enrollments

GEDs are much more likely to participate in postsecondary education and vocational training than are other dropouts. In the survey studies reviewed, over half of the GED recipients—between 50 and 63 percent—got some additional civilian education and training in degree-granting colleges, vocational schools, apprenticeship programs, or on-the-job training. GEDs are most likely to enroll in community colleges and vocational/technical schools and to concentrate on acquiring occupational skills. This focus is understandable: most are adults and many have family responsibilities.

The GED share of postsecondary enrollments declined from 7 percent in 1986 to 4 percent in 1992. Reasons for the decline are unclear, but it occurred in less-than-2-year, 2-year, and 4-year institutions.

Postsecondary Grade Point Averages

The grades of GED students in the institutions examined were close to those of high school graduates. For example, among beginners in 4-year colleges, the difference was roughly that between a C and a low C+. The grades of GEDs and high school graduates enrolled in postsecondary education programs tended to converge over time, as selective attrition of the less able students equalized the groups. In vocational programs, which often last 1 year, this convergence effect was slight; the grade-point averages of GEDs were approximately equal to those of high school graduates. In 2-year colleges, the ratio of GED to high school diploma grade point averages increased from .82 in the first year to 1.06 upon completion, and in 4-year colleges, it increased from .86 to 1.00. In all three types of schools, GEDs who graduated earned approximately the same grade point averages as those with regular high school credentials.

Postsecondary Persistence and Completion Rates

In general, GED recipients are less likely than high school diploma holders to complete their postsecondary education. While GEDs graduate from vocational programs at about the same rate as their counterparts, they are only half as likely to earn associate's degrees and much less likely to earn bachelor's degrees.

These attrition rates are probably not a "result" of GED certification, but of other predisposing factors associated with possession of the credential, such as single-parent status and delayed enrollment.

Labor Market Performance of GED Recipients

Over the last two decades, the real annual earnings of young adults have declined at rates related to educational attainment. College graduates lost ground in the early 1970s, but their earnings have leveled off since then. The earnings of workers with less education have continued to decline. Those with the least education and the lowest earnings, the high school dropouts, are losing ground most quickly. Dropouts would gain substantially if they had the earnings of high school graduates, but assuming the continuation of present conditions, they would still be experiencing a long-run decline in earnings.

To assess the labor-market performance of GED recipients, we reviewed cross-sectional studies, which compared GED recipients and others at the same time, and longitudinal studies, which compared the performance of GEDs and others before and after completion of the test battery.

Cross-sectional Studies

The analyses of cross-sectional studies examine the labor-market performance of GED recipients; highlight three key explanatory variables; and assess the indirect effects of GED attainment.

Labor Force Participation and Employment Status

In controlled comparisons, the GED credential had little effect on labor force participation or unemployment but was positively associated with gains in full-time employment.

Wages

In controlled analyses, the wages of male GEDs were 6 to 12 percent higher than those of dropouts; female wages were up to 13 percent higher; and the wages of GED adults (both sexes) were 5 to 11 percent higher. In all studies but one, however, GEDs earned less than high school graduates. Much of the apparent wage effect of GED status may actually be an effect of other key characteristics of GED recipients, which are examined below.

Time Spent Working

In controlled comparisons, GED males spent less mean time working than dropouts, while females spent more time working. On average, GEDs of both sexes worked less than high school graduates. In simple comparisons, GED males experienced more job turnover than dropouts, while females experienced less. Both male and female GEDs had more job turnover than high school graduates.

Annual Earnings

In simple and controlled analyses, GEDs earned more than other dropouts but less than high school graduates. In the short term, GED recipients had no earnings advantage over dropouts, but their relative earnings grew over time. The low returns to the GED shortly after certification may reflect opportunity costs of acquiring more education and training.

Key Control Variables and GED Outcomes

Several variables associated with GED status may explain much of the apparent GED effect on wages.

Years of Schooling

On average, GED recipients have more years of elementary and secondary schooling than other dropouts and (of course) less than high school graduates. These differences may affect wages. In the research reviewed, among males of similar race, ethnicity, and maternal education, all differences in hourly earnings between the three groups could be explained by differences in years of secondary schooling completed. Neither the high school diploma nor the GED had any additional "sheepskin" effect. Among females, a substantial part of the wage differences could be explained by years of secondary schooling, but the there remained a possibility of credential effects.

Postsecondary Attainment

High school graduates have more postsecondary education than GED recipients, who in turn have more than other dropouts. Controlled studies showed that variation in postsecondary attainment helps explain the wage difference between GED recipients and diploma graduates and, to a much lesser extent, the difference between GED recipients and other dropouts. Nevertheless, GEDs still had higher wages than other dropouts after the effect of postsecondary education was taken into account.

Cognitive Ability

On average, the basic cognitive ability of GED recipients is close to that of high school graduates and considerably above that of dropouts. Controlling on cognitive ability greatly reduced or eliminated any wage differences between GEDs and dropouts but had a smaller effect on differences between GEDs and high school graduates. Controlling on ability statistically removed the GEDs'

primary advantage over other dropouts—their greater cognitive skills. Since the basic cognitive skills of GEDs are close to those of high school graduates, the difference in their wages was less affected by the introduction of this variable as a control.

Educational attainment and cognitive ability are strongly related. Taken together, analyses of the effects of secondary schooling, higher education, and cognitive ability suggest that accumulated human capital, reflected in level of education and ability scores, accounts for most of the wage differences among high school graduates, GEDs, and dropouts of similar backgrounds.

Indirect Effects of GED Attainment

Although direct effects of GED certification on wages are limited, once education level or ability are controlled, the credential does have substantial indirect effects. It increases access to postsecondary education and training, and if GED recipients take advantage of that access, their wages tend to improve. Female GEDs also receive indirect wage benefits through the additional job tenure and work experience that the GED enables them to obtain. Male GED recipients, however, do not increase their wages through tenure and experience, because they have less than dropouts.

Longitudinal Analyses

An analysis of data from the National Longitudinal Survey of Youth (NLSY) found no initial GED effect on wages for males, but over time, wages grew more rapidly than they would have had GED certification not been attained. The authors think the data reflect an indirect GED effect on wages through further training and job search. In another study based on the NLSY, wage effects for females were positive but not statistically significant.

An analysis from an evaluation of a federal JOBS program found that having a GED was associated with $47.37 per month higher earnings for males and females combined. An analysis of women in a job training program for welfare mothers found a GED effect of $22.60 monthly, an 8–10 percent increase in earnings.

In the JOBS study, time spent in basic education to prepare for the GED was negatively associated with earnings, possibly because participating in basic education resulted in less time working. On the other hand, basic education, a GED, and time spent in job training or college had substantial positive effects. The combination of a GED with vocational training and attainment of an occupational license produced especially large effects.

Based on the evidence, high school dropouts can improve their economic condition by obtaining the basic or remedial education needed to pass the GED and through the GED, obtaining further job-related education and training. If such a strategy is followed, the opportunity costs of acquiring additional educa-

tion and training may limit early returns to the credential, but the returns will increase over time.

The GED and the U.S. Armed Forces

Until the 1980s, the armed services made no practical distinction between high school graduates and GED recipients in enlistment policy. Then military manpower studies showed that GED attrition rates were double those of high school graduates and about the same as those of dropouts. For example, between 1977 and 1983, the 36-month attrition rates were 22 percent for high school graduates, 45 percent for GEDs, and 52 percent for dropouts. The services invest heavily in training and providing for new recruits, and high attrition rates are unacceptable. Consequently, the military developed a three-tier system for assessing the educational qualifications of applicants. High school graduates are placed in the first tier and are regarded as the best prospective recruits. GEDs are placed in the second tier, and dropouts in the third. Nevertheless, some 35,000–40,000 GED recipients do enlist in the military each year.

Conclusion

The GED process identifies and certifies high school dropouts whose ability to read, write, think, and do math is better than that of other dropouts and about equal to that of high school graduates, on average.

The tests do not measure other characteristics related to performance in postsecondary education, the civilian labor market, and the military. GED recipients typically have more schooling and come from families with higher socioeconomic status than do other dropouts. High school graduates, in turn, have more of these assets than GEDs. Characteristics such as these explain a substantial part of the differences in the performance of GEDs, dropouts, and high school graduates.

GED certification provides reliable information about an individual's basic cognitive skills to postsecondary institutions, employers, the military, the federal government, and others who might be asked to make a selection decision about that person.

By signalling cognitive competencies to decision makers who usually know little about an individual, the GED can help open the door to opportunity. Once through the door, however, the individual has to use the cognitive skills and whatever other knowledge, skills, and abilities he or she may have in order to succeed.

GED certification can help in gaining access to postsecondary education and can help recipients get financial assistance. Once enrolled in college, GEDs earn grade point averages similar to those of high school diploma holders, but they are less likely to graduate.

In postsecondary vocational programs, GED recipients seem to be average students. The short-term, job-related nature of these programs and the hands-on learning they entail probably have an appeal for students who left high school early, are struggling to fulfill adult responsibilities, and want to improve their job prospects.

GED certification can also increase job opportunities somewhat. Once on the job, GED recipients have to use both their cognitive and noncognitive skills in order to succeed, as do other workers.

Male GEDs tend to earn higher wages than other dropouts, but because of their greater schooling, they might have earned as much without the credential. They spend about the same amount of time working as other dropouts, and they have more job turnover. Female GEDs get at least the same relative wage advantage as males—an advantage not entirely explained by prior schooling—and, unlike males, they spend more time working and have less turnover than dropouts do. Most of the GED's effect on wages comes not from the credential, but from the human capital that it reflects or makes accessible.

It is worthwhile for a high school dropout to get a GED. Its biggest advantage is that it increases access to postsecondary education and training, which tend to improve economic outcomes.

On the other hand, GED rates of persistence in the structured activities examined in this study seem problematic, especially for males. First evident in high school, the problem appears to recur in other contexts. GED attrition rates in the military were close to those of dropouts. In postsecondary education, other than vocational programs, GED graduation rates were much lower than those of high school diploma holders. In the labor market, male GEDs spent less time working than dropouts, or the same amount, and had more job turnover. (The labor market outcomes are suggestive but difficult to interpret. To some extent, they may reflect the opportunity costs of acquiring more education and a tendency to leave old jobs for new ones with better pay.)

The GED process certifies one form of human capital—cognitive skills—but, unlike a high school education, does not generate it. Nor does the GED process generate or certify noncognitive human capital, such as work habits and the ability to function well in organizations—attributes positively related to persistence. Based on military studies, researchers have concluded that completion of high school demonstrates the presence of such attributes and that a high school diploma reflects them.

Noncognitive skills, abilities, and attitudes come from many sources, especially the family and the school. The role of the school in developing them is widely recognized but not well enough understood. Involvement in the process of schooling (e.g., regular attendance, meeting deadlines, complying with authority, and cooperating with others) may affect later outcomes as much as learning the content of schooling.

Years of education and training, either preceding or following GED attainment, have much more impact on labor market outcomes than the credential itself. Hence, marginal students should be (and usually are) encouraged to finish high school wherever possible. For those who do drop out, participation in alternative programs that have structure, rigor, and longevity may recoup some of the advantages lost by not finishing high school. Education policy makers should consider developing high school completion programs leading to a regular or adult diploma. Along other lines, awarding higher levels of GED certification for higher test scores, which educators in South Dakota are considering, may provide an incentive for dropouts to invest more time and energy in studying for the test. Those who pass the test should understand that GED certification is primarily a stepping stone and that additional progress in the labor market can best be made by completing postsecondary education and training programs. Counseling to help GED recipients navigate in college could also be a useful measure.

In some respects, GED recipients resemble high school graduates; in others, they resemble dropouts; in still other ways, they fall between the two. Given these mixed findings, the common practice of counting GEDs as high school graduates in educational statistics should be reconsidered.

Further, we should keep in mind that neither the high school diploma nor "some college" have been sufficient to enable young adults to maintain earnings over the years since the 1970s. It seems unlikely that, in the absence of other macroeconomic changes, education policy alone can reverse this trend.

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